US009058634B2

(12) **United States Patent**
Buan et al.

(10) **Patent No.: US 9,058,634 B2**
(45) **Date of Patent: Jun. 16, 2015**

(54) **METHOD FOR PROVIDING A NEGATIVE PRESSURE WOUND THERAPY PUMP DEVICE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 713 days.

(21) Appl. No.: **13/299,852**

(22) Filed: **Nov. 18, 2011**

(65) **Prior Publication Data**

US 2012/0302978 A1 Nov. 29, 2012

Related U.S. Application Data

(60) Provisional application No. 61/489,310, filed on May 24, 2011.

(51) **Int. Cl.**

A61M 27/00	(2006.01)
G06Q 50/22	(2012.01)
A61M 1/00	(2006.01)
G06Q 30/06	(2012.01)

(52) **U.S. Cl.**

CPC ***G06Q 50/22*** (2013.01); ***A61M 1/0088*** (2013.01); ***G06Q 30/06*** (2013.01)

(58) **Field of Classification Search**

CPC A61M 1/0001; A61M 1/0005; A61M 1/0013; A61M 1/0023; A61M 1/008; A61M 1/0088; A61M 2001/0017; A61M 2001/0052; A61M 2013/00536; A61M 27/00; F04B 9/02; F04B 17/06; F04B 49/08; F04B 49/20

USPC 604/304, 313, 319; 417/15, 17, 18, 42

See application file for complete search history.

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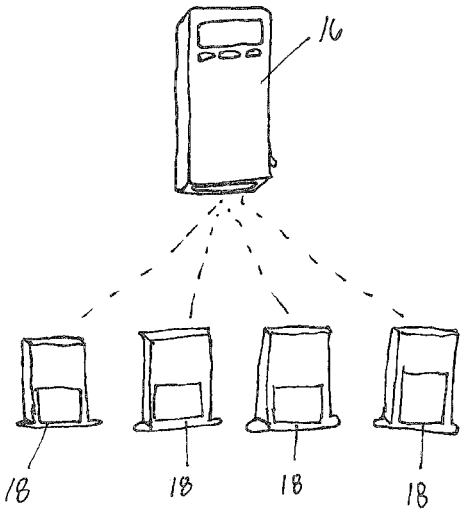
(57) **ABSTRACT**

A method for providing a device used in association with a negative pressure wound therapy bandage wherein a controller module and a plurality of pump modules are provided to a third party, who leases the controller module and provides the pump modules to an end user. A case for the device may also be provided.

9 Claims, 4 Drawing Sheets



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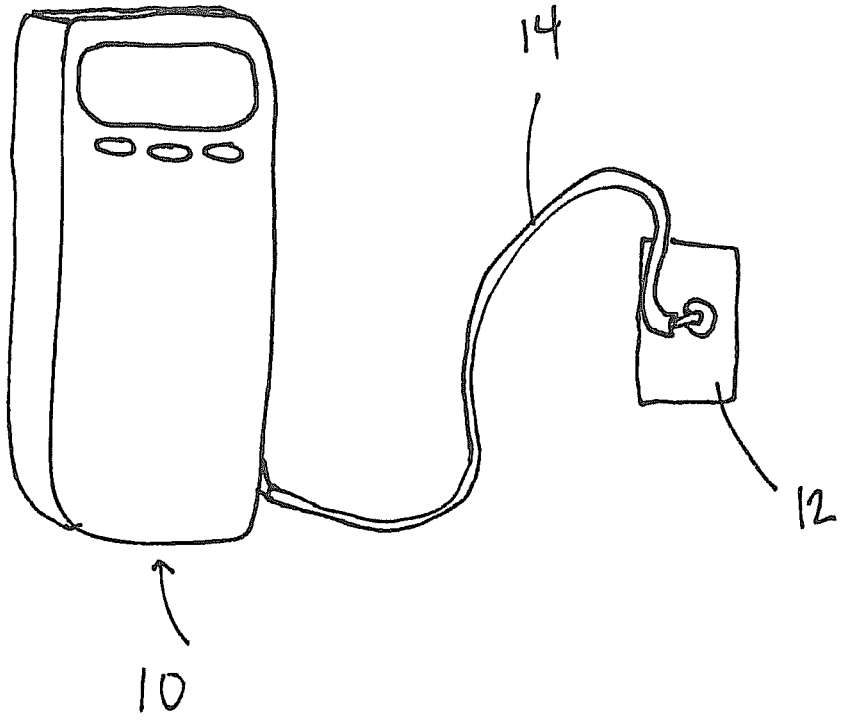

FIG. 1

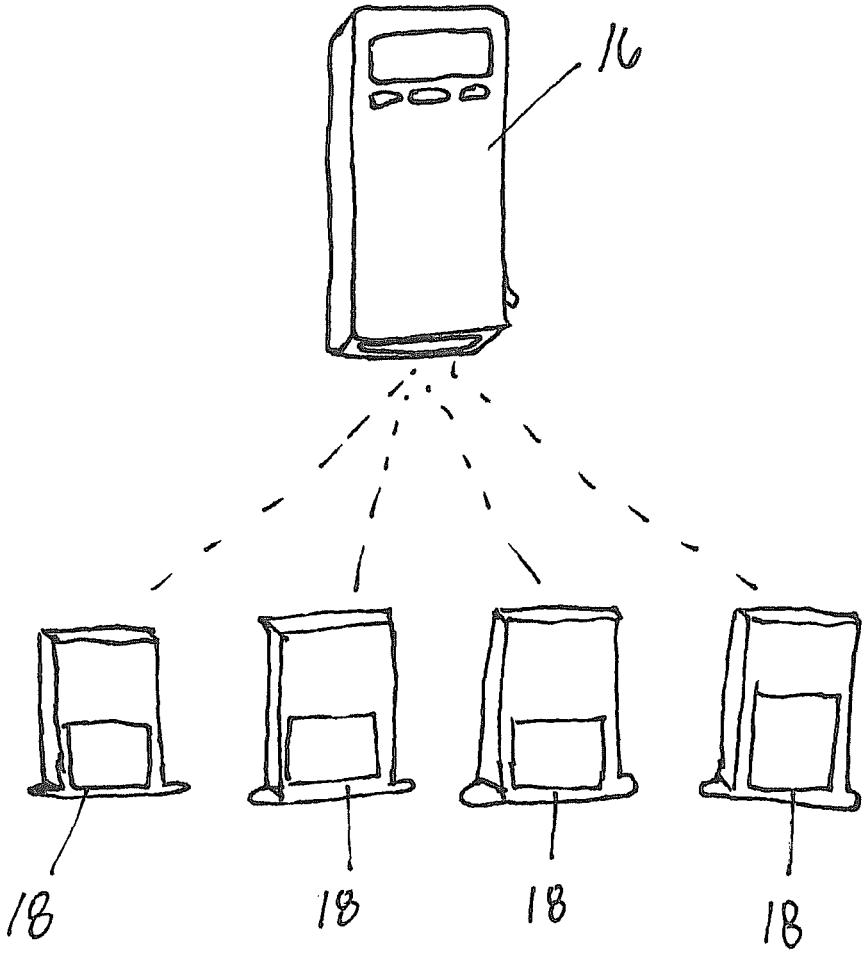

FIG. 2

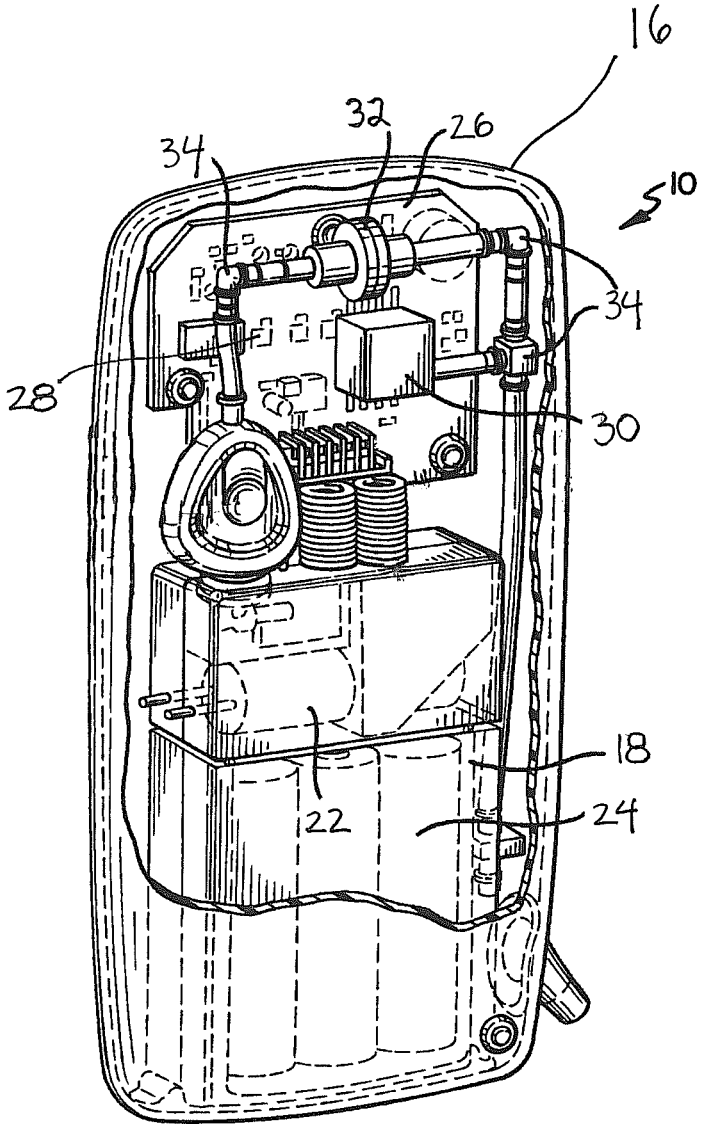

FIG. 3

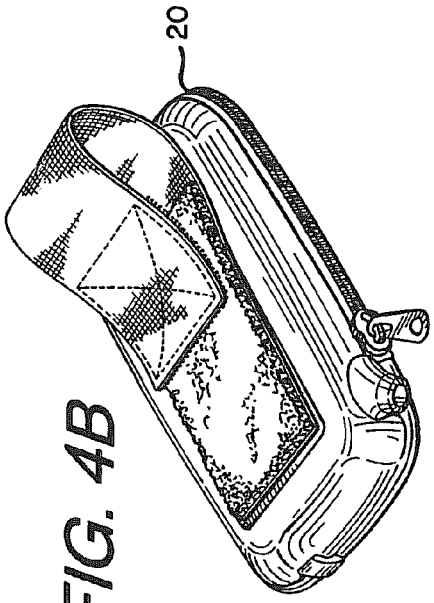

FIG. 4B

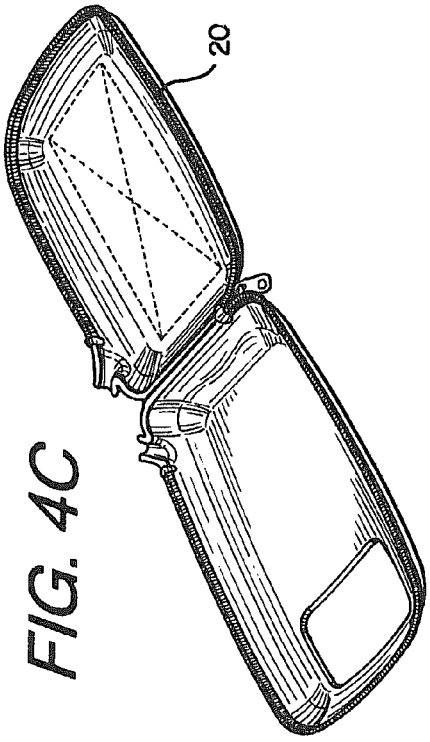

FIG. 4C

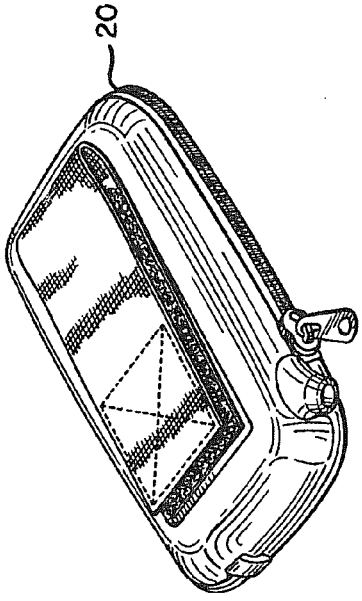

FIG. 4A

METHOD FOR PROVIDING A NEGATIVE PRESSURE WOUND THERAPY PUMP DEVICE

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Patent Application No. 61/489,310 filed on May 24, 2011, the entirety of which is incorporated by reference.

FIELD OF THE INVENTION

The invention relates to a method for providing/supplying a pump system for negative pressure wound therapy.

BACKGROUND OF THE INVENTION

Negative pressure wound therapy (NPWT) is one method of treating certain wounds or sores on people. In general, a specialty dressing (or bandage) is placed over a wound site, and connected to a pump system. The pump system provides suction, creating a negative pressure under the bandage at the wound site. Exudates and other materials are removed from the wound site under the influence of the negative pressure. The NPWT wound dressings are single patient use and purchased as needed.

The pump systems, which at retail purchase are quite expensive, are generally leased from a medical device supply company (DME) to an "end user" for the period of time necessary to heal the chronic wound, typically 6-8 weeks. The "end-user" can either be a patient, whose insurance carrier makes the lease payments, or a "facility," such as a nursing home or hospital, which will lease the equipment on behalf of the patient. Given the relatively short term of use for any one patient, it does not make any financial sense for either a patient or a treating facility to own such equipment.

The pumping devices are designed to be durable and capable of being reused across the care of multiple patients. However, being complex electromechanical systems, they can break down or otherwise fail, requiring both the end users and the leasing company to maintain a sufficient level of inventory. This can be both costly and require a large amount of space for both the leasing company and the end users.

Moreover, given that the structural component of the system that performs the actual pumping of air, the pump, is believed to be the most likely element to fail in the pumping system, it would be beneficial for all interested parties, DME and end-users, to be able to employ a system that minimizes the cost associated with repairing and using these NPWT pumping systems, and otherwise avoid disposing of the functioning elements in the pumping device.

The present invention is directed to resolving these and other matters.

SUMMARY OF THE INVENTION

In one embodiment of the invention, the invention is directed towards a method for providing a device to be used in association with a negative pressure wound therapy bandage including the steps of providing a controller module including a pressure sensor to a third party, providing a first pump module including a pump to the third party, providing a second pump module including a second pump to the third party, wherein the third party leases the controller module to an end user, and, wherein the controller module removably receives the first pump module and provides a first negative pressure treatment, and wherein after providing the first negative pressure treatment, the first pump module can be removed and the second pump module can be inserted into the controller module for providing a second negative pressure treatment.

In an embodiment of the invention, the controller module, first pump module and second pump module are provided simultaneously. As used herein "simultaneously" is intended to mean in the same transaction, and, preferably in the same shipment or package.

In a further embodiment, a first case sized to cover the controller module and the first pump module received therein is provided and a second case sized to cover the controller module and the second pump module received therein is also provided. These may be provided simultaneously with each other, and may also be provided simultaneously with the pump modules.

Yet another embodiment of the invention includes providing a third pump module including a third pump to the third party, and, providing a fourth pump module including a fourth pump to the third party. The can be provided simultaneously with the controller module, first pump module and second pump module. These can also be provided in association with cases, which may be provided simultaneously with the pump modules and/or the controller module.

In still another embodiment of the present invention, the invention is directed to a method for providing a device to be used in association with a negative pressure wound therapy bandage by leasing a controller module including a pressure sensor to an end user, providing a first pump module including a pump to the end user, providing a second pump module including a second pump to the end user, wherein the end user utilizes the controller module and the first pump module to provide a first negative pressure treatment, wherein the controller module removably receives the first pump module, and wherein after providing the first negative pressure treatment, the first pump module can be removed and the second pump module can be inserted into the controller module for providing a second negative pressure treatment.

As in other embodiments, cases may be provided with the pump modules. Further, the cases, pump modules and/or controller modules may be leased and/or provided simultaneously. In addition, additional pump modules may also be provided.

Further, it is contemplated that in any of these embodiments, one or more negative pressure wound therapy bandages are provided to the third party in connection with the other devices.

One of ordinary skill in the art will appreciate that while the embodiments discusses providing a single controller module and various numbers of pump modules, the invention encompasses providing any number of controller modules and pump modules to the purchaser/end user.

A method according to one or more embodiments of the present invention is believed to provide numerous benefits.

One or more of the disclosed embodiments, would allow the end users that lease the controller units to have a large supply replaceable pump modules. If the pump module fails before, during, or after negative pressure wound therapy treatment, the end user can simply obtain another pump module its own inventory, switch out the pump modules, and begin/resume a second negative pressure wound therapy treatment.

These methods would also benefit the individuals (people, companies, etc.) that supply the pump devices to the end users because they could also create a large inventory of pump modules to provide/sell to the end users. At the same time, they do not need to maintain such a large inventory of controller modules that are being leased to cover broken or oth-

erwise non-functioning pump devices. In other words, with other systems, these suppliers would need enough of an inventory to cover a certain number of pump devices breaking down in the field. However, with one or more of the embodiments of the present invention, the supplies could minimize the amount of controller modules in inventory, and build up a larger supply of pump modules.

Further, since the suppliers do not have to build such a large supply of controller modules, the suppliers can minimize their financial investment in a non-used inventory. In other words, the suppliers do not have to spend as much money on controller modules for inventory.

Since the controller modules are intended to be used with different patients at different times, it is beneficial to provide disposable covers to minimize the spread of diseases, bodily fluids and otherwise promote general cleanliness in the health care environment.

It is to be understood that the aspects and objects of the present invention described above may be combinable and that other advantages and aspects of the present invention will become apparent upon reading the following description of the drawings and detailed description of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully apparent from the following description and appended claims, taken in conjunction with the accompanying drawings. Understanding that the accompanying drawings depict only typical embodiments, and are, therefore, not to be considered to be limiting of the scope of the present disclosure, the embodiments will be described and explained with specificity and detail in reference to the accompanying drawings as provided below.

FIG. **1** is a front perspective view of a device provided according to one or more embodiments of the present invention.

FIG. **2** is a front perspective view exploded view of a controller module and a plurality of pump modules provided according to one or more embodiments of the present invention.

FIG. **3** is a front side cutaway view of a device provided according to one or more embodiments of the present invention.

FIGS. **4***a-c* are a top view of a cover provided according to one or more embodiments of the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

While this invention is susceptible of embodiment in many different forms, there is shown in the drawings and will herein be described in detail one or more embodiments with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiments illustrated.

Reference throughout this description to features, advantages, objects or similar language does not imply that all of the features and advantages that may be realized with the present invention should be or are in any single embodiment of the invention. Rather, language referring to the features and advantages is understood to mean that a specific feature, advantage, or characteristic described in connection with an embodiment is included in at least one embodiment of the present invention. Thus, discussion of the features and advantages, and similar language, throughout this specification may, but do not necessarily, refer to the same embodiment.

In reference to the attached drawings, the present invention is directed towards a method of providing a device **10** used in association with a negative pressure wound therapy bandage **12**. Typically, tubing **14** is utilized to provide negative pressure from the device **10** to the negative pressure wound therapy bandage **12**.

Certain embodiments of the invention include the steps of providing a controller module **16**, and providing a plurality of pump modules **18**. The pump modules **18** contain a pump **22**, and preferably a power source **24**. The controller module **16** may contain, inter alia, electronics **26**, LEDs **28**, a pressure sensor **30**, a check valve **32**, and tubing **34**.

The controller module **16** and pump modules **18** are typically sold to a third party; however, the present invention contemplates that they may be leased, rented, lent, or provided free as a demo. As used herein "third party" means a company, person or other entity that does not manufacture the devices **10**, controller modules **16** or pump modules **18** and that does not administer or otherwise perform negative pressure wound therapy treatment. However, the present invention contemplates that the manufacturer of the devices **10**, controller modules **16** or pump modules **18** may be the lessor of the controller module **16**.

The third party then leases the controller module **16** to an end user. As used herein, "end user" means a company, person or other entity that administers or otherwise performs negative pressure wound therapy treatment on a patient. The third party also provides pump modules **18** to the end user. Since the pump modules **18** are meant to be disposed, this transaction may be a lease, it may be a sale, or they may be provided free. Alternatively, different number of pump modules **18** may be provided under different transaction conditions. For example, the first pump module **18** with each controller module **16** may be provided free, and additional pump modules **18** may be sold, leased, rented, lent, etc.

After the end user performs negative pressure wound therapy on a patient, or if the first pump module **18** fails, the end user can switch out the first pump module **18** for a second pump module **18**. After the second pump module **18** is used on a patient, the end user can switch out the second pump module **18** for a third, and so on and so forth. This allows the end user, and the third party, to build up a supply of pump modules **18**, which are relatively inexpensive, while maintaining a smaller supply of controller modules **16**, which are relatively expensive.

In certain embodiments, at least one of the pump modules **18** may be provided simultaneously with the controller modules **16**. As will be appreciated, after the initial transaction, subsequent pump modules **18** may be provided after the controller module **16** has been provided.

Moreover, certain embodiments include providing a disposable case **20**, sized to cover the device **10**. It is contemplated that a cover **20** is provided with each pump module **18** so as to maintain a level of cleanliness, since the controller module **16** is intended to be used with different patients, while the pump modules **18** are intended to be disposed of after one use.

As discussed above, a method according to one or more embodiments of the present invention is believed to provide a number of advantageous and benefits in the field of providing negative pressure wound therapy.

It is to be understood that additional embodiments of the present invention described herein may be contemplated by one of ordinary skill in the art and that the scope of the present invention is not limited to the embodiments disclosed. While specific embodiments of the present invention have been illustrated and described, numerous modifications come to

mind without significantly departing from the spirit of the invention, and the scope of protection is only limited by the scope of the accompanying claims.

What is claimed is:

1. A method for providing a device to be used in association with a negative pressure wound therapy bandage, comprising the steps of:

providing a controller module including a pressure sensor to a third party;

providing a first pump module to the third party, the first pump module comprising a first pump and a first power source;

providing a second pump module to the third party, the second pump module comprising a second pump and a second power source;

providing a third pump module to the third party, the third pump module comprising a third pump and a third power source;

providing a fourth pump module to the third party, the fourth pump module comprising a fourth pump and a fourth power source;

wherein the third party leases the controller module to an end user; and,

wherein the controller module removably receives the first pump module and provides a first negative pressure treatment, and wherein after providing the first negative pressure treatment, the first pump module can be removed and the second pump module can be inserted into the controller module for providing a second negative pressure treatment.

2. The method of claim **1**, wherein the controller module, first pump module and second pump module are provided simultaneously.

3. The method of claim **1**, further comprising the steps of:

providing a first case sized to cover the controller module and the first pump module received therein; and,

providing a second case sized to cover the controller module and the second pump module received therein.

4. The method of claim **1**, wherein the first pump module, the second pump module, the third pump module and the fourth pump module are provided simultaneously.

5. The method of claim **4**, further comprising the step of:

providing a case with each pump module sized to cover the controller module and each pump module received therein.

6. The method of claim **5**, wherein the cases are provided simultaneously with the pump modules.

7. A method for providing a device to be used in association with a negative pressure wound therapy bandage, comprising the steps of:

leasing a controller module including a pressure sensor to an end user;

providing a first pump module to the end user, the first pump module comprising a first pump and a first power source;

providing a second pump module to the end user, the second pump module comprising a second pump and a second power source;

providing a third pump module to the end user, the third pump module comprising a third pump and a third power source;

providing a fourth pump module to the end user, the fourth pump module comprising a fourth pump and a fourth power source;

wherein the controller module removably receives the first pump module;

wherein the end user utilizes the controller module and the first pump module to provide a first negative pressure treatment; and

wherein after providing the first negative pressure treatment, the first pump module can be removed and the second pump module can be inserted into the controller module for providing a second negative pressure treatment.

8. The method of claim **7** wherein the controller module, first pump module and second pump module are provided simultaneously.

9. The method of claim **7**, further comprising the steps of:

providing a first case sized to cover the controller module and the first pump module received therein; and,

providing a second case sized to cover the controller module and the second pump module received therein.

* * * * *